

A black dress with a lace collar and hem, featuring red ribbons and buttons. Below the dress are two red knitted booties. The items are laid out on a white background.

USING THE
MICROFADOMETER
ON THE MUSEUM'S
COLLECTIONS... AND
AT THE NATIONAL
LIBRARY OF
AUSTRALIA

*Azaria Chamberlain's dress and booties.
Photo: Dragi Markovic*

One of the responsibilities of the National Museum of Australia as the keeper of the National Historical Collection is to provide access to the collection for audiences to engage with now, and for generations of Australians in the future.

While lack of exhibition space is one reason why approximately 95 per cent of the National Museum's collection is not on display in the building on Acton Peninsula, preservation of the objects – specifically their level of fragility when exposed to elements such as lighting and humidity – is another major concern, not just for the National Museum of Australia, but for collecting institutions around the world.

Removing objects on display in permanent gallery spaces and filling the gaps with other objects being preserved in storage is an effective way of minimising risks to the objects, but it comes at a significant financial cost to cultural institutions. Fabrication of purpose-built display cases, adjustment of lighting, and human resources are just the surface of a very labour intensive, and therefore, very expensive exercise. National Museum conservators suggest that being able to extend the length of time objects can be exhibited, without compromising the long-term condition of the objects, would be an ideal scenario.

Invented by Dr Paul Whitmore at the Carnegie Mellon University in Pittsburgh, the microfadometer, a machine designed to test the extent to which colour pigment changes with exposure to light, is helping conservators address illumination concerns.

According to consultant conservation scientist Bruce Ford, who has been working closely with the National Museum's Conservation team, there are only 12 microfadometers in the world housed in institutions including the Getty Conservation Institute, the Canadian Conservation Institute, and the Tate Gallery, London. The National Museum of Australia owns what is currently the only microfadometer in the Southern Hemisphere.

Having seen encouraging results testing objects in the National Museum's collection such as dresses from the *Springfield* collection, the Miss Australia crown, and a selection of Ernabella textiles, Acting Conservation Manager Nicki Smith is keen to help conservators from other collecting institutions learn more about the strength and fragility of their collections. 'We're all in the same business as far as looking after historical objects for future generations,' Nicki said.

In December 2010 Bruce Ford spent four days in the National Library of Australia's Preservation Lab using the microfadometer to test objects scheduled for display in the Library's Treasures Gallery.

Manager of Collection Preservation at the National Library of Australia, Jennifer Lloyd, said the opening of the Library's Treasures Gallery late next year would enable the public to view prized collection items such as Lieutenant James Cook's *Endeavour* Journal, the John Hunter sketchbook and an original *Waltzing Matilda* manuscript. 'It is crucial to put such treasures to the microfadometer test to provide information about their fading characteristics and avoid permanent visible damage,' she said. 'Not only are we ensuring that these items can go on long-term display in our new Treasures Gallery, we are also working together with other institutions like the Museum in the true



From left: Nicki Smith, Jennifer Lloyd and Bruce Ford in the Preservation Lab at the National Library of Australia. Photo: Sam Cooper, National Library of Australia

sense of co-operation that can only benefit the Australian cultural collection as a whole.'

National Museum Acting Conservation Manager Nicki Smith agrees that the data supplied by the microfadometer has provided some significant outcomes for conservators. 'It's had a huge impact on conservation, specifically in relation to the way that we can put objects on display and feel more confident, comfortable and certain that appropriate light levels are being applied,' Nicki said.

'In assessing the risks associated with light fading we're actually making the collection more accessible. One of the objectives is to identify low risk objects we can leave on display but also identify those that we consider highly significant, and where colour is critical then we need to be more careful,' Nicki said.

The National Museum is responsible for preserving and caring for the collection as well as providing access to the collection. Nicki explained that by applying the data produced by the microfadometer these two responsibilities can be comfortably achieved.

One of the many ways in which the National Museum provides access to the collection is through institutional loans, for example a loan of Azaria Chamberlain's black dress and red booties to the Powerhouse Museum has enabled Sydney audiences to engage with a significant Australian story. Having tested the dress and booties with the microfadometer and interpreting the data, Bruce Ford explained that the black dress is made from a synthetic fabric with a modern dye: 'we've found it to be very lightfast for a textile,' he said. Bruce admits that, while the red buttons and ribbon on the dress as well as the red booties would fade faster than the black fabric, the rate of fading of the pigment in the red is still very slow, making it of limited concern.

Nicki explained that, when the Powerhouse Museum requested that the loan of the dress and booties be extended, National Museum conservators were in a position to be able to grant the request, knowing that the two Museums could work together to share an engaging historically significant story while being confident that the object will be available to share that story with future generations.

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